

Socioeconomic Impact Assessment

I. INTRODUCTION

Pursuant to California law, the primary authority for controlling Volatile Organic Compounds (VOCs) emissions from architectural coatings, resulting from coatings manufacture and use, belongs to local air pollution control or air quality management districts. Historically, however, the California Air Resources Board (CARB) provided guidance and other assistance to the districts, including the development of model rules or Suggested Control Measures to reduce air contaminants, such as VOCs, that are ozone precursors. This practice is very important for regulating emissions from architectural coatings because the manufacture and use of such coatings are not confined to one area or a few areas of the state of California, but these activities are occurring almost daily throughout the whole state.

Current District Rule 67.0 (last revised in 2001) controls VOC emissions from manufacture, sale and use of architectural coatings that include a variety of residential, commercial and industrial paints, stains, varnishes, and other coatings. This rule followed the guidance of CARB SCM for Architectural Coatings issued in 2000. In 2005, CARB conducted a survey of architectural coatings available in California during 2004. The survey goal was to collect information on the latest nomenclature of architectural coatings manufactured, sold, and used in the state, their composition and quantities. From this data, CARB estimated the amount of VOC emissions occurring as a result of the manufacture and use of architectural coatings. The survey showed that in spite of the increase in California's population and the volume of architectural coatings sold, the total VOC emissions from this coating category have decreased. Nevertheless, many parts of the state have still not attained the federal or state air quality standards for ozone and some additional measures were required to further improve the air quality in California.

Subsequently in 2007, CARB issued a new SCM, which has more stringent emission limits and other requirements than presently existed. The SCM's lower VOC content limits and other new requirements for architectural coatings are based on the data obtained from the CARB survey conducted in 2005. The SCM Technical Support Document also included information on the availability of low VOC content coatings, especially waterborne coatings.

It should be noted that CARB indicated that the SCM is intended for all California air pollution control districts, excluding the South Coast Air Quality Management District (SCAQMD). While the SCM is similar to SCAQMD Rule 1113 (Architectural Coatings) as it existed in 2007, some emission limits in the SCM are not as stringent. This was done because some parts of California, especially its Northern part, have weather conditions significantly different from a dry warm climate of the South Coast region. Therefore, the SCM and all the information in the Technical Support Document do not apply to four counties regulated by the SCAQMD rule.

Following the adoption of the SCM by the CARB Governing Board, the CARB Executive Officer's letter to California air pollution control agencies "strongly encouraged local districts to adopt the SCM without modifications, except for reformatting it, if necessary."¹ Therefore, proposed new Rule 67.0.1 is very similar to the 2007 CARB SCM and includes the same coating nomenclature, definitions, VOC emission limits, and other requirements.

II. STATUTORY REQUIREMENTS

California law requires air pollution control districts to perform a socioeconomic impact assessment (SIA) when adopting, amending, or repealing rules and regulations that will significantly affect air quality and emission limitations.

Health and Safety (H&S) Code Section 40728.5, Subdivision (b), specifies the following elements to be included in the SIA:

1. The type of industry or business, including small business, affected by the rule or regulation.
2. The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.
3. The range of probable costs to industry or business, including small business, of the rule or regulation.
4. The availability and cost-effectiveness of alternatives to the rule or regulation.
5. The emission reduction potential of the rule or regulation.
6. The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air quality standards.

Pursuant to H&S Code Section 40728.5(e), the analyses specified in 2. and 4. above are not required if the proposed rule is substantially similar to or required by a state or federal law, regulation, or formal guidance document, including federal Control Techniques Guidelines (CTGs). The District considers the CARB SCM to be a formal guidance document and accordingly, proposed new Rule 67.0.1 is very similar to the CARB SCM in terms of coating definitions, emission standards, and administrative, reporting, and testing requirements. Therefore, based on the H&S Code stipulation, the SIA below does not address either the availability or cost-effectiveness of the alternatives to proposed new Rule 67.0.1, or its impact on the employment and the economy of San Diego County. These issues have been discussed in the SCM Technical Support Document² issued by CARB.

In addition, the Technical Support Document contains a thorough analysis evaluating possible economic impacts on coating manufacturers, distributors, retailers, and users. In 2007, CARB distributed an Economic Impacts Survey to all known manufacturers of architectural coatings (147 companies) who would be impacted by the proposed SCM. The survey's goal was to evaluate approximate costs of complying with the lower VOC content limits of architectural coatings and other requirements to be proposed in the new SCM. CARB received 36 responses that included small, medium and large paint manufacturing companies.

The survey results showed that 12 companies would not be impacted by the proposed SCM because they have already reformulated their coatings to comply with the more stringent VOC content limits of the SCAQMD. The rest of the companies did not consider the additional expenses to comply with the SCM requirements to be significant.

III. NECESSITY OF ADOPTING NEW RULE 67.0.1

San Diego County Air Basin does not attain the national and state ambient air quality standards for ozone. Both federal and state laws require the District to implement rules that control emissions of ozone precursors – VOCs and oxides of nitrogen. Current Air Pollution Control District (District) Rule 67.0, based on the 2000 CARB SCM for Architectural Coatings, was adopted by the District in 2001 and is now seriously outdated. In 2007, CARB issued a new SCM that was based on the latest achievements in low VOC content coating technology.

Adopting proposed new Rule 67.0.1 that reflects the 2007 CARB SCM will provide the District with the opportunity to further control VOC emissions from architectural coatings and obtain sizeable VOC emission reductions. This action will also result in improvement in air quality in San Diego County and expedite the attainment of the national and state ambient air quality standards for ozone.

IV. THE TYPE OF INDUSTRY AND BUSINESS, INCLUDING SMALL BUSINESS, AFFECTED BY THE PROPOSED RULE

Proposed new Rule 67.0.1 would potentially impact industries engaged in manufacturing paints, varnishes, enamels and allied products (NAICS 325510); end users of architectural coatings including do-it-yourself consumers and painting contractors that may be small businesses, and maintenance personnel (NAICS 238320); wholesale sellers of paints, varnishes, and supplies (NAICS 424950); and paint stores (NAICS 444120). In addition, the rule may impact new construction and maintenance of buildings both industrial and non-industrial, transportation infrastructure, industrial structures such as aboveground fuel tanks, etc.

V. THE RANGE OF PROBABLE COSTS OF THE PROPOSED RULE AND ITS IMPACT ON INDUSTRY OR BUSINESS, INCLUDING SMALL BUSINESS

State law requires local air pollution control districts to conduct an SIA before adopting a rule that will significantly affect air quality or emission limitations. Proposed new Rule 67.0.1 contains new, more stringent VOC emission limits and other new requirements for the manufacturing and use of architectural coatings. While the SCM is not a state regulation, the CARB urged the air districts¹ to adopt the SCM without significant changes, so the rules for architectural coatings that are widely used across the state will have the same VOC emission limitations and other requirements. Therefore, this SIA is using the CARB Economic Analysis of the SCM² as a guidance document in order to assess the impact of proposed new Rule 67.0.1 on the economy and employment of San Diego County.

The most significant feature of the 2007 SCM is the reduced VOC content limits for many coatings, in both general and specialty categories. These requirements may affect both paint

manufacturers that will have to reformulate the coatings and consumers such as paint suppliers, sellers, painting contractors and individuals that will have to pay higher prices for coatings.

In order to evaluate the economic impact of the SCM, CARB considered two possible scenarios. In one scenario, it was assumed that all the costs of paint reformulation were fully absorbed by the paint manufacturing industry without negatively affecting consumer prices. Subsequently, CARB conducted a survey that included 147 coating manufacturing companies operating in or out of the state of California. The selection of survey participants was based on each company's sales revenue and the quantity of coatings produced, and both either complying or not complying with the proposed VOC content limits. A total of 36 companies, including small, medium, and large manufacturers, responded to the survey. CARB then estimated the SCM impact on the profitability of these companies by analyzing how the cost of compliance would affect their return on equity (ROE). ROE is defined as the amount of net income returned as a percentage of shareholders equity (i.e., it measures a corporation's profitability).

For each group of businesses, CARB estimated the cost of compliance with the SCM, including the cost of federal and state taxes. These costs have been included in the overall cost of coatings manufacture for companies of several sizes (i.e., large, medium, and small). The new value of the ROE based on the three-year average was calculated and compared with the original ROE for each business size. The results of this analysis showed that ROE reductions ranged from negligible to a decline of 1% for large businesses and 4.7% for small paint manufacturers. A decrease of 10% (value used consistently by CARB since 1990) in ROE is considered by ARB to be a sign of a significant economic impact. Therefore, CARB concluded that there will be no significant impact of the proposed SCM on coating manufacturing companies.

There is only one paint manufacturing business in San Diego County and it is not classified as a small business. According to the company's website, it produces about 12,000 gallons of paints per year, including architectural coatings. The recent information from the company shows that about 80% of architectural coatings presently produced are water-based paints that are in compliance with the VOC content limits of proposed new Rule 67.0.1. The rest of the paints are solvent based that either comply with the rule requirements or are not classified as architectural coatings. Therefore, there will be no economic impact of the proposed rule on the paint manufacturing industry in San Diego County. Obviously, the majority of coatings used in the county are manufactured either in other parts of California or outside of the state. Thus, the evaluation of possible economic impacts on the paint manufacturing industry as a result of the SCM requirements conducted by CARB will also be applicable to San Diego County.

The other possible scenario considered by CARB assumed that all costs of coatings reformulation to achieve the lower VOC content are passed on through increased coating prices to consumers such as painting contractors, retailers or individual users of coatings. Based on this assumption, CARB estimated the cost increases for all reformulated paint categories to be between a net savings and a cost of \$6.82 per gallon at the point of manufacture, with an average cost increase by approximately 30 cents per gallon of paint. Taking into consideration the subsequent increases on the wholesale and retail levels, the average price increase was estimated to be around 6%, or \$1.21 per gallon of paint. CARB also noted that the largest price increases

may occur in industrial maintenance and other commercial coating applications, with the maximum increase in consumer price of up to 47%.

For coatings most often used by individuals such as flat, non-flat coatings, primers, sealers and undercoaters, the cost increase as a result of paint reformulation will be approximately \$1.65 per gallon of paint (i.e., an increase of approximately 9%). However, even in 2007, at the time of the SCM adoption, there were a variety of architectural coatings complying with the SCM requirements. These coatings also comply with proposed new Rule 67.0.1.

In addition, the majority of air districts in the state have already successfully implemented the SCM, and there is no reason to believe that the impact of the proposed rule on individual consumers or commercial establishments that use architectural coatings in San Diego County would be significant.

While there are no small paint manufacturing businesses in San Diego County, some small establishments, paint distributors, and retail stores can be classified as small businesses. However, considering that the prices for the majority of architectural coatings that comply with the lower VOC content limits did not increase significantly, these businesses should not be negatively affected by proposed new Rule 67.0.1.

VI. THE EMISSION REDUCTION POTENTIAL AND COST-EFFECTIVENESS OF THE PROPOSED RULE

The VOC emission reductions and cost-effectiveness of proposed new Rule 67.0.1 were determined using the information provided in the Technical Support Document for 2007 CARB SCM².

As previously noted, the VOC emissions in the state of California (excluding SCAQMD) from the manufacture and use of architectural coatings were calculated by CARB, based on the results of the 2005 Architectural Coating Survey. The data obtained represented the amount of coatings and their VOC content sold and used during the 2004 calendar year. The calculated VOC emissions from the data were reported to be 47.4 tons/day².

The estimated VOC emissions and emission reductions as a result of the implementation of CARB SCM in San Diego County were determined by apportioning the total VOC emissions for the state of California to individual air districts and according to each district's population. It was also assumed that the population distribution by Air Pollution Control districts in California did not significantly change in the last ten years.

According to the 2010 census, California's population was about 37.2 million. The population of the South Coast air district, which includes four counties, was 15.2 million. The population of San Diego County in 2010 was 3.1 million or 15.4% of the state population, excluding SCAQMD.

The estimated VOC emissions from architectural coatings in San Diego County are:

$$47.4 \text{ tons/day} \times 0.154 = 7.3 \text{ tons/day}$$

The statewide VOC emission reductions as a result of the SCM implementation will be approximately 32%, according to CARB. Accordingly, the projected VOC emission reductions as a result of implementing new Rule 67.0.1 in San Diego County will be:

$$7.3 \text{ tons/day} \times 0.32 = 2.3 \text{ tons/day or } 840 \text{ tons/year}$$

CARB also determined the individual cost-effectiveness of the proposed new lower VOC content limits for each coating category of the SCM and the cost increase per gallon of each coating for consumers, based on raw material costs (not on actual retail prices). The average calculated cost-effectiveness of the SCM was \$1.12 per pound of VOC reduced. It is significantly below the District's average cost-effectiveness for rules controlling VOC emissions of \$6 per pound of VOC reduced.

The average cost increase for consumers as a result of implementation of the SCM calculated by CARB is approximately \$1.21 per gallon of coatings, which is not very significant. The larger price increases may occur in industrial maintenance and other coatings used mostly by professional contractors.

VII. CONCLUSION

Proposed new Rule 67.0.1 will not negatively impact affected paint manufacturing industry or the variety of businesses distributing or selling architectural coatings. The rule will not significantly affect individual consumers of new low VOC content coatings due to their wide availability and comparable prices.

The proposed new rule will provide sizeable air quality benefits by reducing emissions of VOCs that are precursors of ground level ozone, a major component of photochemical smog.

References

1. Letter from James N. Goldstone, CARB Executive Officer, to Air Pollution Control Districts, February 1, 2008.
2. Technical Support Document, Suggested Control Measure for Architectural Coatings, California Air Resources Board, 2007.